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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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David D. Bahler
FULBRIGHT & JAWORSKI L.L.P.
SUITE 2400
600 CONGRESS AVENUE
AUSTIN, TX 78701

EXAMINER

TAMAI, KARL I

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/776,166

Applicant(s)

REED ET AL.

Examiner

Tamai IE Karl

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-4, 6-8 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) 18, 19, 22 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4, 6-8, 18, 19, and 21-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 February 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 01/02 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I on 03/11/2003 is acknowledged.
2. This application contains claims 18 and 19 drawn to an invention nonelected without traverse on 03/11/2003. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
3. Newly submitted claims 22 and 23 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 22 and 23 are independent and distinct inventions which are subcombinations of the original claims where the particulars of the subcombination are not found in the combination: such as, for example: the opposite interior combs coupled together with an interlink, opposing interior/exterior combs, and internal nested combs.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 22 and 23 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the side and edge of the stage, the first/second plurality of springs must be shown or the features canceled from the claims, and the microframe configured to receive a micro-optical element. No new matter should be entered. The examiner specifically requests the specification and drawings be amended to include reference numbers for these claimed limitations.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: edges of the stage, first plurality of springs, first side, second plurality of springs, second side.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 21, 2-4, 6-8, 24, and 25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. The specification does not provide a full, clear, concise, and exact written description of the sides and edges of the stage. The specification does not have a written description of the first plurality of springs and the second plurality of springs. The examiner notes there is no written description for the sides and edges of the stage. The examiner notes that it is particularly unclear what is difference between an side and edge. For the purposes of advancing prosecution on the merits, the examiner will assume the stage has four sides with the end of side being the edge of that side, but also a side in an of itself.

In regards to claims 24 and 25, the specification does not have a full, clear, concise, and exact written description of how the microframe will receive the micro-optical element. The examiner could find no written description or preferred embodiment for how the frame will be configured to receive the optical element. Therefore, for the purposes of advancing prosecution on the merits the examiner will assume the recitation of "configured to receive and a micro optical element" is merely an intended use.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the claims omits how the microframe is configured to receive an optical element, therefore the limitation is merely a recitation of intended use.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2-4, 6-8, 21, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlosser et al. (Schlosser)("Filling the Memory Access Gap: A case for ON-Chip Magnetic Storage) and Baidya et al. (Baidya)("MEMS Component Extraction", Technical Proceedings of the 1999 Conference on Modeling and Simulation of Microsystems, 4/1999). Schlosser teaches a mems device with four pairs of comb drives and a plurality of springs between the combs and the stage, and a plurality of springs between the electrodes. The first and second springs being orthogonal to each other, and shown as bar springs. Figure 4e showings the beams between the

electrodes and the stage being bent while the others are straight. Schlosser teaches the second plurality of first springs connected to the second moveable member by the second plurality of second springs (and vice versa). Schlosser does not teach the springs being between the edges of the stage. Baidya teaches the support between the combs and the stage set between the edges of the stage (figures 3 and 7), to reduce peak stress. Figures 3(b) and 3(c) showing the equivalence of the springs mounted on the edges and between the edges. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Schlosser with the springs between the edges of the stage, as in Baidya, to reduce peak stress.


12. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schlosser et al. (Schlosser)("Filling the Memory Access Gap: A case for ON-Chip Magnetic Storage) and Baidya et al. (Baidya)("MEMS Component Extraction", Technical Proceedings of the 1999 Conference on Modeling and Simulation of Microsystems, 4/1999), in further view of Lee et al.(Lee)(US 5969848). Schlosser and Baidya teach every aspect of the invention except the optical element and the stage being constructed with microframes. Lee teaches the frame for electrostatic actuators is constructed with subframes (around holes 67) and mounts an optical element 30. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the actuator of Schlosser and Baidya, with the stage having a micro optical element and microframes to allow for an inexpensive microactuator, as taught by Lee.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai at (703) 305-7066. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nestor Ramirez, at (703) 308-1371. The facsimile number for the Group is (703) 305-3432. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist at (703) 308-0956.

Karl I Tamai
PRIMARY PATENT EXAMINER
June 17, 2003


KARL TAMAI
PRIMARY EXAMINER